DOCUMENT RESUME

ED 403 073 PS 024 988

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TITLE Situated Learning in Kindergarten Teacher Education.
PUB DATE 96
NOTE 10p.; In: "Childhood Education: International Perspectives," see PS 024 960.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Context Effect; Foreign Countries; Higher Education; Kindergarten; *Learning Processes; Models; Preschool Education; *Preschool Teachers; *Student Teachers; Teacher Education
IDENTIFIERS Expertise; Finland; *Interactive Learning Process Model; Learning Environment; *Situated Learning; Situational Effects

ABSTRACT

Recent approaches in the study of learning describe it as an interactive process. Learning is seen to take place in the participation framework, between the person and his or her environment, rather than in the individual mind. This study examined the construction and development of expertise as a situational and contextual process, with the learning environment forming the arena and "partner" for individual learning and development. Subjects were nine student teachers in a college for kindergarten teaching in Finland. Data were collected from 1991 to 1994 in two areas: individual data and environmental data. Individual data were gathered through observations and video recordings of student teaching sessions and through student interviews and diaries. Environmental data were gathered from written documents (for example, curricula), supervisor evaluations and interviews, and observation. Preliminary findings suggested that the development process of expertise during teacher education can be described as a continuum of situational learning experiences. The situational experiences were constructed in the interaction process between the learner and his or her environment (which contained both physical and social dimensions). They formed a kind of path for the development process which was constructed according to the characteristics of the interaction partners and the nature of the interaction. The nature and development of this path seemed significant for the quality and content of learning. (Contains 16 references.) (EV)

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SITUATED LEARNING IN KINDERGARTEN TEACHER EDUCATION

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Introduction

Learning has often been studied as an individualistic phenomenon. The traditional approach of expertise research has described the development of expertise almost exclusively as the development of a person's abilities or aptitudes. Research has shown that experts have a much larger and more structured knowledge base than novices from which to draw solutions, for instance, in playing chess, interpreting x-rays, analyzing computer programs, or teaching (e.g. Berliner 1992, Chase & Simon 1973, de Groot 1965, Leinhardt & Greeno 1986, Lesgold et al. 1988, Soloway et al. 1988). The qualitative differences between expert and novice performance have been interpreted to be closely related to the structure and quality of expert and novice knowledge (Glaser 1992).

A more recent approach in the study of learning describes it as an interactive process. Learning is seen to take place in the participation framework, between the person and his/her environment, rather than in the individual mind (e.g. Lave & Wenger 1991). Theories emphasizing the role of interaction in learning originate from the socio-cultural theories of learning (Vygotsky 1978). According to this theoretical perspective, learning is socially and culturally embedded (Rogoff 1990; Wertsch 1991). Learning and thinking are social constructs. What is mediated in a learning interaction is not only the content of learning, but also the processes. (McGuinness 1993, 312)

Despite recent emphasis on the significance of the environment, more exact studies are needed on the essence of social and the mediated influence of the situational aspects of environment.

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Only little empirical research is available on the interplay between person and context in the learning process. From an earlier study (Karila & Ropo 1994) I have come to the conclusion that the dynamic interaction between persons' expectations and the culture of the environment is a significant factor in the learning process. Active interaction with the environment is particularly important when a person's conceptions and knowledge structures undergo major qualitative change. The nature of interaction between a person and the environment is related to the direction and speed of development of expertise.

The purpose of the present study is to examine the construction and development of expertise as a situational and contextual process with the learning environment forming the arena and a "partner" for individual learning and development. I am specifically interested in the interactive processes that mediate situational aspects to the characteristics of expertise.

Methods

The essential method springs from the grounded theory approach (Glaser & Strauss 1967; Strauss & Corbin 1991). A grounded theory is one that is inductively derived from the study of the phenomenon it represents (Strauss & Corbin 1990, 23). The analyses were made qualitatively according to this method. Lack of earlier empirical research caused the analysis to focus on formulating inductive theories of the research problem.

The subjects (n=9) were student teachers in a college for kindergarten teachers. The data were gathered 1991-1994 when the kindergarten teacher education had independent institutional status as a college. Nowadays, the education is located at the University of Tampere in the Department of Teacher Education. All the subjects were female. Their development was followed for three academic years. The data are both individual and environmental. The individual data were gathered using four different methods, namely, observations and video recordings of the subjects' instruction sessions during their practice periods in the kindergartens, interviews with the students before and after the instruction sessions, and interviews with the students several times during their education at the college. All the interviews were tape recorded and transcribed. The students also kept diaries during the practice periods. The data concerning the environment consist of the written documents (laws, curricula, schedules of learning etc.), supervisors' evaluations and interviews with the supervisors as well with the students, and observation of physical environment.

Preliminary findings

The study suggests that the development process of expertise during teacher education can be described as a continuum of situational learning experiences. The situational experiences are constructed in the interaction process between the learner and her learning environment. The situational learning experiences form some kind of path for the development process. The data show that the path develops according to the characteristics of the interaction partners as well as to the nature of the interaction. The nature and the development of the path seemed to be significant for the quality and content of learning.

In this paper I will describe some of the characteristics of the interaction partners namely the student teachers and the learning environment. I will also present some examples of the interaction.

The students' practice periods in the training kindergartens proved highly significant as regards the direction of the learning process. These periods formed a fairly concrete arena for encounters with interaction partners. I will therefore focus on the situational learning experiences the students had during their practice periods.

The learning environment

In the literature the concept *learning environment* has been used in various meanings. Here learning environment includes social and physical elements: interaction with other persons, individual and shared conceptions about the children, pre-school education, practices etc. are interpreted as social elements of the environment, with schedules, rooms, different kinds of organizations and different kinds of groups etc. interpreted as physical elements of the environment.

The data suggests that social and physical elements in the environment are closely related to each other. With both of these appearing in the educational practices the student teachers were involved in. Tyre and Hippel (1993, 2) have emphasized the significance of physical settings. They have stated that learning is *situated* in the sense that *where* learning takes place (and not just who is talking to whom) matters. The preliminary findings of my study partly confirm this conception. The social elements seem to be more determinant than the physical elements. Furthermore, the sense of the physical elements can be understood by means of the social elements. Even if it is sometimes very difficult to separate the social and physical elements of the environment, I believe that even the attempt to do so provides more information concerning the learning process and the interaction between the person and the environment

The overall organization of learning

The students' learning environment consisted of both the world of work (the kindergartens) and of the world of college. This arrangement offered the students opportunities to consider the important issues of pre-school education in two different settings.

The students' progress was based on the alternation of these two worlds. The students practiced in the kindergarten four times in their education. The duration of each period was about five weeks. The kindergartens were ordinary public kindergartens and the supervisors were ordinary kindergarten teachers. At the college the students were given supervision during practice periods from teachers who were kindergarten teachers themselves, and also from specialists in the general methods of early education. They visited the training kindergartens about once or twice during each period observing the students and discussing with them. The students also wrote pedagogical diaries which were important document for the supervisors at the college. Due to the terms of employment the other teachers at the college (lecturers of psychology, social studies, music, sport, art, literature etc.) were not able to give supervision for the students in the training kindergartens. Their teaching load consisted only of lessons, seminars and groupworks at the college. The teachers disliked this kind of arrangement because it seemed to confirm the separation of theory and practice.

The characteristics of learning environment

The two parts of the environment differed. The differences were related both to the nature of the activity (work/learning) and to the conceptions of pre-school education. Both environments were heterogeneous. In addition, the culture (conceptions of education and educational practices based on these conceptions) of the two locations seemed to be in the process of change. Because of the differences and transition processes the most obvious characteristics in the environment were instability and transition.

The data show that the development of expertise is clearly a situational process. As mentioned earlier learning environment consists of physical and social elements. The rooms and the furnishing in the training kindergartens were quite similar. This is easily understood because most of the kindergartens in Finland were built after 1973 (when the Day Care Law was passed) at which time the construction of the kindergartens and other public buildings was regulated by the central administration. Also, the size of groups and the number and the educational level of the staff in each group was regulated. Despite the external similarity of the rooms, the groups and the staff they seemed to form quite dissimilar learning environment for the students. The data reveal that the significance of the physical settings is closely related to

the pedagogical and working culture and, at a concrete level, to the educational practices of the training kindergartens.

The actual discourse of the domain at any one time seemed to form the broader, social frame for the development process. At the time the data were gathered the key topics in pre-school education discussed in Finland were the "teacher as researcher" approach and the "child centered" approach. The first topic appeared mainly at the colleges.

The second topic was in evidence both at the kindergartens and at the kindergarten teacher colleges. This "child centered" topic is a descriptive example of the interaction process, and therefore I will present some data of it.

Situated learning and child-centered education

The college teachers seemed to be more eager to develop new kindergarten practices, especially from the point of view of child centered pre-school education. This approach apparently created interest in kindergartens, too, but only a few of them implemented this in educational practice. The educational practices in the kindergartens in which the students did their training seemed to be in a process of change. One of the most obvious characteristics of the change was the transition from the adult centered professional practices towards the child centered approach. The supervisors differed as to whether they emphasized child centered or teacher centered pedagogical practice.

The college supervisors expected the trainee to apply the child centered approach. Due to the lack of tradition of child centered practice within kindergartens the students had only incidental opportunities to observe more experienced teachers carrying out the educational practices based on child centered approach namely on the developmental level and the interests of children. In some cases the supervisors in the kindergartens could not accept this kind of approach and the trainees were not allowed to use it.

There seemed to be so many different interpretations of child centered pre-school education in the learning environment that students did not know exactly what they were expected to do.

These different approaches and interpretations naturally caused some problems for students' learning situations. Next example describes problems the students had while organizing instruction sessions according child centered approach. Among the college teachers the idea of child centered pre-school education was interpreted so that instruction should usually be organized in small groups (2-10 children). This was also the precept the students tried to follow. At the kindergartens there was a lot of variation in ways of organizing activities for children. For example, some of the kindergartens stressed the right of every child to be provided with equal opportunities and experiences during the kindergarten day. In this kind of educational

culture the student teachers were not allowed to organize different kinds of activities for different children, but were expected to organize the same activities many times per day if they wanted to work with small groups. It did not matter if the activities were not suitable for every child.

On the other hand some of the trainers were eager to study child centered educational practices together with the students. The culture of the kindergarten was thus mediated to the students' developing expertise by the professional practices they were allowed to carry out.

Child centered education is very demanding for the teacher. It demands a good knowledge of childrens' development and powers of observation. Naturally, the students' knowledge of children was in the process of formation. They were just learning how children think and act in different situations and at different ages.

In a way the trainees were charged with developing quite new educational practices. In this kind of situation it is important how students can manage with the demands of the environment.

Situated learning and the profession of kindergarten teacher

The differences between the college and the training kindergartens concerning the nature of the activity were obvious during the last practice period of the students. They were closely related to different conceptions about the profession of kindergarten teacher, especially to the conception of the development process during the professional career. The students felt that most of their supervisors in the kindergartens expected too much maturity. The students themselves as well as their supervisors at the college perceived the last training period clearly as a learning situation. The difference between the conceptions can be understood on the basis of the earlier tradition in kindergarten teacher training. Many of the supervisors in the kindergartens had obtained their education at a time when teacher training was assumed to give the expertise; the work after the basic education was simply understood as application of the knowledge the kindergarten teachers already possessed. In the local tradition of kindergarten teacher training this conception can be evaluated as highly influential. Lately, the ideas of lifelong learning have been more emphasized among the college teachers.

Most of the college supervisors were also interested in developing new perspectives on the profession of the kindergarten teacher, with many of them emphasizing the "teachers as researchers" approach. This approach was little known to the supervisors in the kindergartens, possibly due to the tradition described in the above section.

Apart from the supervisors' conceptions of kindergarten teacher profession there was also variation in supervision conceptions and practices. The students' experiences of the supervisors can be classified into three catego-

ries: a more experienced colleague who learns together with a student, an "expert" who judges what is wrong and what is right, and a worker who carries out the obligation belonging to the job. In this stage of the analysis it can be assumed that the supervisors' own experiences during their education, the nature of their expertise, and the nature of their working environment are related to the ways in which they work as supervisors.

Due to these differences the practice periods were in many ways contradictory. Consequently, the learning environment consisted of various interpretations of children, pre-school education, professional practice in the kindergarten, development of expertise in the kindergarten etc. These various interpretations were notably expressed in the interaction between students and their supervisors. In all cases the practice periods offered the students opportunities to interact with two environments and to construct their knowledge in different learning settings.

The various learning processes

The students' interactive processes with their environment differed from each other. Some of the differences in the interaction were related to the characteristics of the environment, namely the various educational and working cultures of the kindergartens and the various characteristics of the supervisors. As described above the culture of the learning environment was in a process of change. Thus, many contradictions appeared within and between the environments. This situation formed the broader frame for the interactive processes between the students and the environment.

Some of the differences were related to the characteristics of the students, especially to their own orientation towards the environment and the interaction. The students' earlier experiences concerning children, education and life at the kindergarten laid their foundations for their further characteristics. The earlier experiences seemed especially to reflect the expectations and orientations of the students. The students were carrying their earlier experiences with them and into the interactive situations in which they were involved.

There was variation in the students' orientation towards the environment. The various orientations were classified into two categories: a person who seeks support from the learning environment and a self directed person who is in active interaction with the environment. The students' conceptions of pre-school education were also found to vary.

A student's ability to link the experiences she had obtained from different environments and situations seemed to be essential from the point of view of learning. How the student managed to construct a general view concerning the different culture of the environments and how she was able to synthesize them was especially important. Thus it seems evident that social and physical elements do not dominate learning but merely provide some

kind of frame - limitations or opportunities - for learning. It is significant how learners interact with their environment and how they are able to use the environment as a learning resource. The transition process of the conceptions of the students seemed to be a very complicated combination of the earlier experiences and conceptions and the situated learning experiences.

Conclusions

The main purpose of the study is to clarify the nature of the learning processes in the development of expertise. Although the analysis is incomplete it seems evident that the study reveals important aspects of the nature of situated learning in expertise.

The development of expertise during teacher education seems to be just the beginning of the development process. The students' position in the kindergarten seems to be more or less marginal and their opportunities to develop their expertise are related to the educational and working culture of the kindergarten.

The culture of the kindergarten as such did not seem to dominate the learning opportunities of the student. Instead, the nature of the interaction between the student and the learning environment seemed to be more significant.

Due to the differences and transition processes, the most obvious characteristics of the environment were instability and transition. Learning in this context seemed to demand of the student very active orientation towards the environment.

I hope these findings can be applied in developing both theories of expertise development and practical solutions for teacher pre-service and in-service education. It seems to me that in the future education of kindergarten teachers will pay much more attention to the situational aspects of learning. Such attention may reveal the real problems the future teachers have in their learning processes.

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